

Effect of reheating process on the frozen coating system

ABSTRACT

This study was conducted to determine the effect of the reheating process on the frozen coating system of chicken nuggets including its water content, fat content and sensory evaluation using local agriculture and agro based flours such as wheat, rice and sago which are commonly used in Small Medium Enterprise (SME) in lowering cost of coating product ingredients. Three frying temperatures were used namely, 150, 165 and 180°C. Three types of batter, wheat, rice and sago batters were prepared at water to batter ratio of 1:1:2. Chicken nuggets were reheated for 420 seconds in a mini fryer. Results showed that increasing of reheating temperature resulted in the reduction of coating moisture content and an increase in substrate moisture content. However no significant difference was detected ($p>0.05$). Moisture content of coating and substrate chicken nuggets before reheating was higher than after reheating using 150, 165 and 180°C of frying temperature. Coating oil content increased while substrate oil content decreased but no significant difference was evident ($p>0.05$). Oil content of coating and substrate chicken nuggets before reheating were lower than after the reheating process. For sensory evaluation, no significant difference ($p>0.05$) was evident between all the attributes for all samples except in the coating colour and crispiness attribute. The highest score for coating colour was achieved at 180°C of frying temperature followed by 165 and 150°C for all types of batter. The same pattern of result was found for crispiness attribute except for rice batter where the highest score was achieved at 165°C of frying temperature. In conclusion, the physicochemical and sensory property evaluated was affected by the frozen coating system of chicken nugget by the different reheating temperatures. Further research, analyze on heat and substance transfer during the phase change in food system by conducting moving boundary analysis (MBA) studies during the thawing process, drying and frying are highly recommended in order to increased quality of food produced.

Keyword: Reheating; Frozen coating system; Chicken nugget